

IN THE CLAIMS:

1. (Amended) A reclining apparatus comprising:

a fixed plate in which a first guide portion having a pair of mutually opposing guide walls and a second guide portion having a pair of mutually opposing guide walls are formed;

a shaft having an axis provided in the fixed plate so as to allow the shaft to freely rotate around an ~~about the~~ axis ~~in a horizontal direction~~;

a rotary plate relatively rotating around the shaft with respect to the fixed plate and in which an internal gear is formed along a circular arc around the shaft;

a first slide gear received between respective guide walls of the first guide portion and freely moving between a lock position engaged with the internal gear and a lock canceling position moving apart from the internal gear; and

a second slide gear received between respective guide walls of the second guide portion and freely moving between a lock position engaged with the internal gear and a lock canceling position moving apart from the internal gear; and

a cam member provided between the first ~~slide gear~~ and the second slide gear gears and simultaneously driving the first and second slide gears between the lock position and the lock canceling position,

wherein a the cam includes at least one supporting portion having an inclined surface, along which the cam member and at least one of the first and second slide gears oppose one another, preventing the at least one of the first and second slide gear gears thereby being prevented from moving in a direction of a rotational moment applied to the at least one

of the first and second slide gear gears due to a backward load applied to the seat back
when the at least one of the first and second slide gears is in the lock position ~~is provided in~~
~~a portion in which the cam member and the slide gear oppose to each other.~~

2. (Original) A reclining apparatus as claimed in claim 1, wherein the cam member
has a pair of hook portions engaging with receiving portions respectively formed in the first
and second slide gears,

the hook portion and the receiving portion have a cam surface pressing the slide gear
to the internal gear in a condition in which the cam member rotates in the direction of the
lock position, and

the hook portion and the receiving portion are formed in a shape displacing the slide
gear in an opposite direction to the rotational moment applied to the slide gear due to the
backward load applied to the seat back when the cam member rotates in the lock canceling
direction.

3. (Original) A reclining apparatus as claimed in claim 2, wherein the hook portion
and the receiving portion are respectively provided near a center line of the slide gear in an
area inside both side surfaces of the slide gear.

4. (Original) A reclining apparatus as claimed in claim 1, further comprising:
a bracket fixed to the fixed plate near the shaft; and

a spiral spring in which an inner peripheral end portion thereof is engaged with the bracket and an outer peripheral end portion thereof is engaged with the rotary plate so as to rotate the rotary plate in a direction that the seat back tilts forward,

wherein the bracket is provided with a vertical plate portion protruding out from an end surface of the fixed plate in an axial direction so as to engage with an inner peripheral side end portion of the spiral spring, and a bottom plate portion extending toward the shaft from an edge portion in the fixed plate side of the vertical plate portion, the bracket is fixed to the fixed plate by the bottom plate portion, and

the vertical plate portion is formed in a substantially semicircular cylindrical shape around the shaft, a plurality of notches extending to the vertical plate portion and the bottom plate portion are formed in a crossing portion between the vertical plate portion and the bottom plate portion, and convex portions fitting into the notches are provided in the fixed plate.

5. 5. (Original) A reclining apparatus as claimed in claim 4, wherein a pin protruding to the fixed plate side along an axial direction is provided in an outer peripheral portion of the rotary plate,

an outer peripheral side end portion of the spiral spring is engaged with the pin, a flange preventing the fixed plate from breaking away from the rotary plate is provided at a middle position between the spiral spring and the fixed plate in the pin, and

a stopper being brought into contact with the pin when the fixed plate and the rotary plate relatively rotate at a predetermined angle is provided in the outer peripheral portion of the fixed plate.

6. (Amended) A reclining apparatus as claimed in claim 5, wherein in a first one of the fixed plate and the rotary plate, a ~~linear~~ protrusion ~~being~~ in slidable contact with a second one of the fixed plate and the rotary plate ~~another~~ is provided, the slidable contact occurring about all-around the periphery of the shaft second one of the fixed plate and the rotating plate.

7. (Amended) A reclining apparatus as claimed in claim 1, wherein
an urging member interposed between the fixed plate and the rotary plate and rotating the rotary plate in a direction in which the seat back tilts forward is provided, and
~~that~~ a center of an engaging position between the first and second slide gears and the internal gear is arranged on a line vertically crossing a line along a standard tilt angle of the seat back and passing through a center of rotation of the rotary plate.

8. (Amended) A reclining apparatus as claimed in claim 1, wherein the reclining apparatus comprises:

a pair of holding ~~member~~ members provided in the fixed plate, rotatably supporting the rotary plate and preventing the rotary plate from breaking away from the fixed plate; and

an urging member interposed between the fixed plate and the rotary plate and rotating the rotary plate in a direction in which the seat back tilts forward, ~~and;~~

that ~~that~~ wherein each of the pair of holding member members is provided close to one each of the slide gears ~~and at least on by one in each of the slide gears,~~ and wherein at least a part of ~~the portion holding the rotary plate~~ one of the holding member members is located within a circumferential range ~~of a width extending in an engaging direction of one of~~ the first and second slide gears gear.

9. (New) A reclining apparatus, comprising:

a fixed plate having two pairs of opposing guide walls formed therein;

a rotary plate abutting the fixed plate, the rotary plate including a locking engagement surface;

a pair of slide gears, each of the pair of slide gears being sandwichably located between the fixed plate and the rotary plate and each including a locking surface, wherein each of the pair of slide gears includes a cam member hook receiving recess and a slide gear cam surface, wherein each of the pair of slide gears is slidably moveable between one of the two pairs of opposing guide walls in the fixed plate, each of the pair being moveable between a first position wherein the cam member locking surface engages the rotary plate lock engagement surface and a second position wherein each of the pair of slide gears is disengaged from the rotary plate lock engagement surface; and

a cam member having two opposing hook portions and two cam surfaces, each of the hook portions being rotationally engageable within the cam member hook receiving recess of

one of the pair of slide gears, and each of the two cam surfaces being engageable with the slide gear cam surface of one of the pair of slide gears, wherein rotation of the cam member in a first direction moves the pair of slide gears to the second position via engagement of the hook portions of the cam member with the receiving recess of each of the pair of slide gears, and wherein rotation of the cam member in a second direction moves each of the slide gears to the first position via contact of the two cam surfaces of the cam member with the slide gear cam surface of each of the pair of slide gears;

wherein each of the two cam surfaces engaged with the slide gear cam surface of one of the pair of slide gears prevents rotation of the rotary plate in one rotational direction relative to the fixed plate when the pair of slide gears is in the first position.

10. (New) A reclining apparatus as claimed in claim 9, further comprising:
a shaft engaging the cam member via an opening in the cam member.

11. (New) A reclining apparatus as claimed in Claim 9, further comprising:
a holding member attachable to an edge of the rotary plate; and
a spiral spring engageable at a first end with the fixed plate via a positioning convex portion of the fixed plate and at a second end with the holding member.

12. (New) A reclining apparatus as claimed in Claim 11, wherein the fixed plate includes a pair of rotation limiting extensions, the rotation limiting extensions limiting rotational motion of the rotary plate via stopping rotational movement of holding member.

13. (New) A reclining apparatus as claimed in Claim 11, wherein the holding member includes a flange, the rotary member being abutably held to the fixed member via the flange of the holding member.
